

REMARKS/ARGUMENTS

Claims 1-16, 18 and 25-28 were pending all of which stand rejected. Claim 1 has been amended.

Applicant thanks the Examiner for the telephone interview that she granted Applicant's attorney on September 15, 2005.

The following is a summary of that telephone interview:

1. Applicant's attorney referred to the following statement on page 6, lines 9-12, of the May 18, 2005, Office Action (hereinafter "the Office Action"):

"Applicant argued that Orczyk et al. and Kwan et al. do not teach or suggest cooling the wafer by an amount sufficient to terminate processing the wafer because in both cases the processing continues after the substrate is cooled. However, the claims do not require all process to be terminated." [Emphasis added.]

Claim 1 recited, in part:

"performing all of the following in the sequence indicated while maintaining said plasma in said reaction chamber:
"inserting the wafer into the reaction chamber;
"processing the wafer in the plasma;
"cooling the wafer by an amount sufficient to terminate processing the wafer;" [Emphasis added.]

Thus, Claim 1 recited "processing the wafer" and "cooling the wafer by an amount sufficient to terminate processing the wafer." Applicant's attorney stated that the ordinary meaning of this language would appear to require that the cooling terminate all processing. Nonetheless, to remove any ambiguity in this regard, he agreed to amend Claim 1 to specifically require that the cooling of the wafer terminate all processing of the wafer.

Claim 1 has been so amended.

At col. 14, lines 32-35, Orczyk et al. state:

"After this liner layer has been deposited, helium is flowed through the cooling channels in e-chuck 20 (step 708), thermally coupling the substrate to the water-cooled chuck and thus cooling the substrate." [Emphasis added.]

At col. 14, lines 24-35, Kwan et al. state:

"After the first deposition is completed, the gas chemistry is cycled to etch the deposited layer. . . . In one embodiment, the wafer is cooled for the etching step to a temperature substantially less than the temperature during the deposition step. [Emphasis added.]

Thus, Orczyk et al. and Kwan et al. state, or at least strongly imply, that the prior processing step is completed before the wafer is cooled. In any event, neither of these references affirmatively teach "cooling the wafer by an amount sufficient to terminate all processing of the wafer."

2. Applicant's attorney also pointed out that Claim 1 requires "inserting the wafer into the reaction chamber" "while maintaining said plasma in said reaction chamber." The Office Action stated at page 6, lines 17-19, that "Applicant admitted prior art is cited as evidence that this step do [sic] not impart patentability to the claims because is [sic] well known in the art (page 2, page 3, line 1-7)."

The Examiner appears to be arguing that Claim 1 is unpatentable because a single limitation of Claim 1 is mentioned in the "background" section of the application. But Claim 1 recites a combination of limitations, and thus the issue is whether that combination is patentable. The Examiner is obligated to show either that all of the limitations of Claim 1 are disclosed as admitted prior art in the application (if she intends to use § 102 as the ground of rejection) or that the admitted prior art in the application can properly be combined with another reference (if she intends to use § 103 as the ground of rejection). The Examiner has done neither of these things.

Orczyk et al. and Kwan et al. clearly teach striking the plasma after the wafer has been inserted into the reaction chamber. See, for example, col. 2, lines 52-55, col. 13, lines 41-47, and Fig. 6 (steps 701-703) of Orczyk et al., and col. 13, lines 50-66, and Fig. 3 (steps 310-340) of Kwan et al.

Moreover, the "background" section of the application, read as a whole, clearly indicates that introducing the wafer into the plasma increases the amount of damage to the gate dielectric and is therefore unacceptable (see page 2, lines 23-26). Thus the application teaches away from maintaining the plasma while transferring the wafer into the reaction chamber, unless this procedure is used in the method of the invention.

Applicant submits that Claim 1 is allowable for either of the above reasons independently.

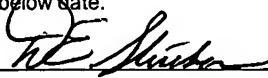
Furthermore, the Examiner has failed to present any basis for the rejection of Claim 28, which was added in the Amendment dated January 28, 2005, and which recites "cooling the wafer before inserting the wafer into the reaction chamber." The Office Action therefore does not comply with 37 CFR § 104(a)(2), which requires that "the reasons for any adverse action or any objection or requirement will be stated in an Office action."

Enclosed with this Amendment is a request for a one-month extension of time in which to respond to the Office Action. Since September 18, 2005, was a Sunday, and this Amendment is being filed on September 19, 2005, a one-month extension is adequate.

For the above reasons, Applicant respectfully requests allowance of Claims 1-16, 18 and 25-28. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8201.

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Attorney for Applicant(s)


9/19/05

Date of Signature

Respectfully submitted,



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